CLAIMS

1.   A service node for coupling a client to a network having at least one server, said service

node comprising:

    a)   a gateway configured for connection to a network;

    b)   a switch configured for connection to a client;

    c)   a data routing system extending from said switch to said gateway, said switch,

        data routing system and gateway collectively forming a path, through said service

        node, configured for coupling said client to said network;

    d)   a bandwidth measurement device coupled to said path, said bandwidth

        measurement device configured for determining upload and/or download data

        transfer rates between said client and said service node.

2.   The service node of claim 1 wherein said data routing system is comprised of a router

coupled to said switch and said gateway.

3.   The service node of claim 2 wherein said bandwidth measurement device is coupled to

said gateway.

4.   The service node of claim 3 wherein said switch is an ATM edge switch.

5.   The service node of claim 3, wherein said client is a PC and said network is the Internet.

6.   The service node of claim 3 wherein said bandwidth measurement device is a server.

7.   The service node of claim 6, wherein a measurement application resides on said bandwidth measurement server, said measurement application determining said upload and/or download data transfer rates for said bandwidth measurement server.

8.   The service node of claim 7, wherein, if determining said upload data transfer rate between said client and said service node, said measurement application determines said upload data transfer rate based upon an analysis of arriving data packets originating at said client and, if determining said download data transfer rate between said service node and said client, said measurement application generates data packets for transfer to said client.

9.   The service node of claim 8, wherein said measurement application maintains an applet suitable for download to said client and wherein, if determining said upload data transfer rate between said client and said service node, said downloaded applet generates said data packets originating at said client and, if determining said download data transfer rate between said service node and said client, said downloaded applet determines said download data transfer rate based upon an analysis of said data packets generated by said measurement application upon arrival at said client.

10.   The service node of claim 7, wherein a web application resides on said bandwidth measurement server, said client accessing said measurement application via said web application.

11.   The service node of claim 10, wherein said bandwidth measurement server further comprises a measurement database coupled to said measurement application, said measurement database maintaining data collected during measurement of said upstream and/or downstream data transfer rates.

12.   An intranet for providing on-demand Internet access to subscribers, said intranet comprising:

    a)   a service node; and

    b)   a plurality of subscriber terminals, each one of said plurality of subscriber terminals coupled to said service node by a corresponding xDSL line;

    c)   said service node comprising:

        i. a switch coupled to each one of said plurality of xDSL lines;

        ii. a gateway coupled to the Internet;

        iii. a data routing system extending from said switch to said gateway, said switch data routing system and gateway collectively forming a path, through said service node, for coupling each one of said plurality of subscriber terminals to the Internet; and

        iv. a bandwidth measurement device coupled to said path, said bandwidth measurement device configured for determining upload and/or download data transfer rates between said service node and requesting ones of said plurality of subscriber terminals which access said bandwidth measurement device.

13.   The intranet of claim 12, wherein said data routing system is comprised of a router coupled to said switch and said gateway.

14.   The intranet of claim 13, wherein said bandwidth measurement device is coupled to said gateway, said requesting ones of said plurality of subscriber terminals accessing said bandwidth measurement device through said gateway.

15.   The intranet of claim 14, wherein said bandwidth measurement device is further coupled to said router and wherein said intranet further comprises a service provider terminal coupled to said router, said service provider terminal accessing said bandwidth measurement device through said router.

16.   The intranet of claim 15, wherein said bandwidth measurement device is a server.

17.   The intranet of claim 16, wherein a measurement application resides on said bandwidth measurement server, said measurement application performing said measurements of said upload and/or download data transfer rates for said requesting ones of said plurality of subscriber terminals.

18.   The intranet of claim 17, wherein a web application resides on said bandwidth measurement server, said requesting ones of said plurality of subscriber terminals accessing said measurement application through said web application.

19.   The intranet of claim 18, wherein said bandwidth measurement server further comprises a measurement database coupled to said measurement application, said measurement database

maintaining data collected during measurement of said upstream and/or downstream data transfer rates for said requesting ones of said plurality of subscriber terminals.

20. The intranet of claim 19, wherein said measurement database is further coupled to said web application, said service provider terminal accessing said data maintained in said measurement database through said web application.

21. A method for analyzing performance of an internet service provider over a period of time, comprising:

    a) determining, for a terminal coupled to the Internet by said internet service provider, a baseline data transfer rate between said terminal and an access node, operated by said internet service provider, through which said terminal is coupled to the Internet;

    b) determining a subsequent data transfer rate between said terminal and said access node; and

    c) comparing said baseline data transfer rate to said subsequent data transfer rate.

22. The method of claim 21, and further comprising determining that a degradation of service has occurred if said subsequent data transfer rate is below said baseline data transfer rate by more than a pre-selected threshold value.

23. The method of claim 21 wherein said baseline data transfer rate is determined during an initial access of said access node by said terminal.

24. The method of claim 23 wherein said access node is a service node.

25. The method of claim 24 wherein said terminal is coupled to said service node by an xDSL line and wherein said internet service provider provides on-demand internet access for a subscriber via said terminal.

26. The method of claim 25 wherein said baseline data transfer rate is determined by a service technician installing said on-demand internet access for said subscriber and said subsequent data transfer rate is determined by said subscriber.

27. For an internet service provider which provides a subscriber with access, to the Internet, at a rated speed, a method for determining if below-rated speed data transfers experienced by said subscriber when accessing the Internet with are caused by operating conditions within the control of said internet service provider, comprising:

    a)   coupling said terminal to an internet access node operated by said internet service provider;

    b)   determining a data transfer rate between said terminal and said internet access node; and

    c)   if the variance between said determined data transfer rate and said rated speed is within an acceptable range, determining that said below-rated speed data transfers are outside the control of said internet service provider.

28. The method of claim 27 wherein said access node is a service node and wherein said internet service provider provides on-demand Internet access to said subscriber via said service node.